
LABORATORY
OF THE
INLAND REVENUE DEPARTMENT
OTTAWA, CANADA

BULLETIN No. 210

Liniment of Chloroform (Linimentum Chloroformi).

NOTE.

Vendors are responsible for the accuracy of information furnished by them to the official Food Inspectors of this Department. If through ignorance, carelessness, or for other cause, they make false statements, involving injury to manufacturers, the manufacturers so injured may exact indemnification by legal process.

A sample of White Pepper, sold by Cameron & Downing, Vankleek Hill, Ont., was stated by them to have been furnished by the Pure Gold Manufacturing Co. Ltd., Toronto. They have since made the following statement :—

" This certifies that we did not purchase at any time or receive from the Pure Gold Mfg. Co. Ltd., Toronto, White Pepper, and that the reference in Bulletin 203, page 10, sample No. 42801 (Pepper), issued by the Department of Inland Revenue, is inaccurate in stating that the said white pepper was obtained by us from the Pure Gold Mfg. Co. Ltd. "

Dated at Vankleek Hill this Thirtieth (30) day of June, 1910.

(Signed) CAMERON & DOWNING.

In the presence of D. J. COUTURE.

Mr. John T. Conway of Perth, Ont., acknowledges misstatement to our Inspector of the facts regarding a sample of White Pepper, as follows :—

" This certifies that I did not purchase or receive from the Pure Gold Mfg. Co. Ltd., Toronto, any White Pepper during the term between December 31st, 1907 to October 1st, 1909, and that the reference in Bulletin 204, page 10, sample No. 42803 (Pepper), issued by the Department of Inland Revenue, is inaccurate in stating that the said White Pepper was obtained by me from the Pure Gold Mfg. Co. Ltd."

Dated at Perth this Eleventh day of July.

(Signed) JOHN T. CONWAY,

In the presence of A. J. GIBSON.

LABORATORY

OF THE

INLAND REVENUE DEPARTMENT

OTTAWA, CANADA

BULLETIN No. 210

Liniment of Chloroform *Linimentum Chloroformi*

OTTAWA, June 21, 1910.

W. J. GERALD, Esq.,
Deputy Minister of Inland Revenue.

SIR,—I beg to hand you a report upon the examination of 72 samples, purchased throughout Canada in February, March and April of the present year, as Liniment of Chloroform.

The British Pharmacopœia directs this liniment to be prepared from equal parts of Chloroform and Liniment of Camphor. According to Squire's Companion (p.375) it should have a specific gravity of 1.212, and should yield a residue of about 37 per cent. Liniment of Camphor is a solution of 1 part of camphor in 4 parts of Olive Oil. The fixed residue above referred to, as characteristic of Liniment of Chloroform, consists of the Olive Oil introduced with the Liniment of Camphor.

It is so evident that all the samples now reported have been intended to conform to the requirements of the British Pharmacopœia; (1) in which case the Liniment of Camphor employed should be that of the B. P. This is important, since the Liniment of Camphor of the U.S.P., although having the same content of camphor, is directed to be made with Cotton Seed Oil instead of Olive Oil.

All but 17 samples of the 72 samples now reported, contain Cotton Seed Oil, and have therefore been prepared with an adulterated Olive Oil, or with the Camphor Liniment of the United States Pharmacopœia.

There can be little doubt that Cotton Seed Oil is a satisfactory substitute for Olive Oil in camphor liniment; nevertheless I am compelled to declare all the samples of Liniment of Chloroform containing Cotton Seed Oil technically adulterated, since the British Pharmacopœia expressly requires Olive Oil to be used, in the preparation of Camphor liniment. This liniment is made with Olive Oil in most European countries; but Portugal employs Almond Oil; Austria, Hungary and Russia, Sesame Oil. The United States of America is the only country authorizing the use of Cotton Seed Oil; and it would appear that, in each country a selection of a suitable oil native to that country, or most easily obtainable in it, is made.

As this is the first time that Liniment of Chloroform has been inspected under the Adulteration Act; and, as further the adulteration found is for the most part of a

purely technical kind, and not detrimental to the efficiency of the article as a drug, I would respectfully recommend that no prosecutions be instituted upon the present report.

A word of warning to the drug trade may be permitted. So long as the British Pharmacopœia is our legal standard of reference, its requirements should be followed to the letter. It goes without saying that tampering with drugs is a thing that cannot be tolerated. While some of these, as in the present instance, are not so potent as to make slight variation in composition a matter of great moment, the rule is that danger to health, or even to life, is incurred by failure to maintain exact observance in their preparation. It is due to the physician, as well as to the patient, that the articles he prescribes should absolutely correspond to pharmacopœal requirements.

I would further recommend the publication of this report as Bulletin No 210.

I have the honour to be, Sir,
Your obedient servant,

A. MCGILL,
Chief Analyst.

(1) The Linimentum Chloroformi U.S.P., is prepared from soap liniment and chloroform in the ratio 7 : 3. Soap Liniment U.S.P., has the following composition :—

	grammes.
Soap (dried and granulated).....	60
Camphor.....	45
Oil of Rosemary.....	10 cc.
Alcohol.....	725 cc.
Water.....	Q.S.
To make.....	1000 cc.

This would give 4·2 per cent residue (soap) and 30 p.c. chloroform to the Linimentum Chloroformi of U.S.P., with 3·15 p.c. camphor, instead of 10 per cent as in B.P.

LINIMENTUM CHLOROFORMI

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher as given by the Vendor.
				Quantity.	Cents.	

DISTRICT OF NOVA SCOTIA—

1910.						
Mar. 9	Linimentum Chloroformi.	41931	Nat. Drug & Chem. Co., Halifax.	12 oz.	1.00	Vendor.....
" 9	"	41932	W. F. Porter, Bridgewater, N.S.	12 "	1.30	"
" 9	"	41933	Taylor Drug Co., Bridgewater, N.S.	12 "	1.30	"
" 9	"	41934	J. D. Clark, Kentville.....	12 "	1.00	"
" 9	"	41235	A. V. Rand, Wolfville.....	12 "	1.00	"

DISTRICT OF PRINCE EDWARD ISLAND—

Mar. 10	Linimentum Chloroformi.	38661	T. N. Enman, Summerside..	12 oz.	1.20	Vendor
" 10	"	38662	A. W. P. Gourlie, Summerside.	12 "	1.00	"
" 12	"	38663	McDonald & McKinnon, Charlottetown.	12 "	1.20	Vendors.....
" 12	"	38664	McKinnon Drug Co., Charlottetown.	12 "	1.20	"
" 15	"	38665	H. Y. Mabon, Souris.....	12 "	1.20	Vendor.....

DISTRICT OF NEW BRUNSWICK—

Mar. 4	Linimentum Chloroformi.	39675	Nat. Drug & Chem. Co., Ltd., St. John, N.B.	12 oz.	1.20	Nat. Drug & Chem. Co., Montreal.
" 15	"	39676	R. T. Mack, Fredericton, N.B.	12 "	1.20	Vendor.....
" 16	"	39677	Garden Bros., Woodstock, N.B.	12 "	1.20	Vendors.....
Apr. 6	"	39678	Fairweather Bros., Moncton.	12 "	1.60	"
" 6	"	39679	G. O. Spencer, Moncton.....	12 "	.90	Vendor....

DISTRICT OF QUEBEC—

Mar. 9	Linimentum Chloroformi.	36543	Dr. Gagnou, 30 Rue St. Pierre, Quebec.	12 oz.	1.20	Vendor.....
" 9	"	36544	V. Giroux, 16 Rue St. Pierre, Quebec.	12 "	1.30	"
" 9	"	36545	W. B. Roger, 41 Rue de la Fabrique, Quebec.	12 "	1.20	"
" 9	"	36546	T. Dubé, 28 Rue St. Jean, Quebec.	12 "	1.20	"
" 9	"	36547	G. P. Plamondon, 122 Rue St. Joseph, Quebec.	12 "	1.20	"

LINIMENTUM CHLOROFORMI.

Inspector's Report. (Is not an expression of opinion).	RESULTS OF ANALYSIS.								N ^o . of Sample.	Remarks and Opinion of the Chief Analyst.
	Sp. gr. of Sample.	Refraction of		Residual Oil.	Volatile Matter.	Camphor.	Chloroform.	Cotton Seed Oil test.		
		Sample.	Residue.							

R. J. WAUGH, INSPECTOR.

				p. e.	p. e.	p. e.	p. e.			
.....	1-3001	1-4604	1-4762	33-68	65-32	8-8	57-5	Present	41931	Adulterated with cotton seed oil.
Made according to B.P. 1899.	1-3000	1-4611	1-4730	32-18	67-82	8-8	50-0	"	41932	"
.....	1-1962	1-4594	1-4770	33-35	66-65	9-6	57-0	"	41933	"
.....	1-1863	1-4623	1-4753	42-63	57-38	1-6	55-7	"	41934	Adulterated with cotton seed oil and too low in camphor.
.....	1-2110	1-4581	1-4714	32-39	67-61	8-0	53-6	"	41935	"

THEO. MOORE, INSPECTOR.

				p. e.	p. e.	p. e.	p. e.			
.....	1-2071	1-4577	1-4703	32-61	67-19	6-4	60-78	.....	38661	Too low in camphor.
.....	1-2023	1-4565	1-4742	30-15	69-85	8-0	61-8	Present	38662	Adulterated with cotton seed oil.
.....	1-1977	1-4604	1-4742	32-09	67-91	9-6	58-3	"	38663	"
.....	1-2143	1-4592	1-4732	30-02	69-98	8-8	61-1	"	38664	"
.....	1-2047	1-4614	1-4742	33-34	66-66	8-0	59-0	"	38665	"

J. C. FERGUSON, INSPECTOR.

				p. e.	p. e.	p. e.	p. e.			
.....	1-1973	1-4504	1-4720	31-63	68-37	8-8	59-5	Present	39675	Adulterated with cotton seed
.....	1-2051	1-4601	1-4730	32-31	67-69	9-2	58-4	"	39676	"
.....	1-1722	1-4628	1-4703	36-52	63-48	11-2	52-2	"	39677	"
.....	1-2092	1-4599	1-4723	31-00	68-10	9-8	58-3	"	39678	"
.....	1-2254	1-4602	1-4748	31-04	68-96	7-6	61-1	"	39679	"

E. BELAND, INSPECTOR.

				p. e.	p. e.	p. e.	p. e.			
.....	1-2214	1-4606	1-4752	32-64	67-36	6-8	60-5	Present	36543	Adulterated with cotton seed oil and camphor too low.
.....	1-2039	1-4592	1-4704	34-67	65-33	7-2	58-1	.....	36544	Camphor too low.
.....	1-2229	1-4617	1-4772	29-49	70-51	10-8	59-7	Present	36545	Adulterated with cotton seed oil.
.....	1-1186	1-4620	1-4753	35-28	64-72	10-4	54-3	"	36546	"
.....	1-1977	1-4610	1-4748	35-21	64-79	7-2	57-5	"	36547	Adulterated with cotton seed oil and low in camphor.

BULLETIN No. 210—

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher as given by the Vendor.
				Quantity.	Cents.	

DISTRICT OF ST. HYACINTHE—

1910.						
Mar. 3	Linimentum Chloroformi.	989	F. C. Saunders, Bedford....	12 oz.	1.25	Vendor
" 8	"	990	Smith & Smith, Nicolet....	12 "	75	Vendors
" 10	"	991	Pharmacie Drolet, Coaticook.	12 "	1.00	Vendor
" 16	"	992	Dr. A. G. H. Berique, Magog	12 "	75	"
" 17	"	993	Pharmacie Guy, St. Jean ...	12 "	1.25	"

DISTRICT OF MONTREAL

Mar. 5	Linimentum Chloroformi.	40422	Henri L. anctot, 295 St. Catherine E., Montreal.	12 oz.	1.00	Vendor
" 5	"	40423	J. A. E. Gauvin, St. Catherine E., Montreal.	12 "	75	"
" 5	"	40424	Arthur Maillet, 621 Craig St., Montreal.	12 "	1.00	"
" 8	"	40425	B. Fox, 168 St. Lawrence B., Montreal.	12 "	1.25	"
" 12	"	40426	O. T. Pinck, 207 McGill St., Montreal.	12 "	75	"

DISTRICT OF OTTAWA—

Feb. 28	Linimentum Chloroformi.	42901	P. J. Nolan, Ottawa.....	12 oz.	1.25	Vendor
Mar. 4	"	42902	The Medical Hall, Corn wall.	12 "	80	"
" 5	"	42903	W. F. Garland, Ottawa..	12 "	1.20	"
" 9	"	42904	Beattie & Argue, Ottawa ...	12 "	1.20	Vendors.....
" 10	"	42905	E. R. DesRosiers, Ottawa...	12 "	1.20	Vendor

LINIMENTUM CHLOROFORMI.

Inspector's Report. (Is not an expression of opinion).	RESULTS OF ANALYSIS.								No. of Sample.	Remarks and Opinion of the Chief Analyst.
	Sp. Gr. of Sample.	Refraction of		Residual Oil.	Volatile Matter.	Camphor.	Chloroform.	Cotton Seed Oil test.		
		Sample.	Residue.							

J. C. ROULEAU, INSPECTOR.

				p. c.	p. c.	p. c.	p. c.			
.....	1.2061	1.4596	1.4700	31.98	68.02	10.9	57.1	.....	989	Genuine.
.....	0.9755	1.4707	1.4733	86.28	13.72	0.0	13.7	Present	990	Adulterated with cotton seed oil and contains no camphor and too little chloroform.
.....	1.2099	1.4596	1.4731	32.79	67.21	7.8	59.4	"	991	Adulterated with cotton seed oil.
.....	1.2008	1.4610	1.4749	34.80	65.20	7.5	57.7	"	992	"
.....	1.1027	1.4653	1.4735	58.24	41.76	0.0	41.7	"	993	Adulterated with cotton seed oil and contains no camphor.

J. J. COSTIGAN, INSPECTOR.

.....	1.2063	1.4612	1.4753	35.58	64.42	7.6	56.8	Present	40422	Adulterated with cotton seed oil.
.....	1.2068	1.4611	1.4748	34.14	65.86	6.4	59.4	"	40423	Adulterated with cotton seed oil and too low in camphor.
.....	1.1662	1.4629	1.4743	43.03	56.97	4.4	52.5	"	40424	"
.....	1.1972	1.4609	1.4757	32.95	67.05	9.6	57.4	"	40425	Adulterated with cotton seed oil.
.....	1.1890	1.4613	1.4758	31.62	68.38	4.8	63.5	"	40426	Adulterated with cotton seed oil and too low in camphor.

J. A. RICKEY, INSPECTOR.

.....	1.1583	1.4609	1.4700	37.22	62.78	12.0	50.7		42901	Genuine.
After purchase of Sample, Vendor stated it was made with Union Salad Oil.	1.1941	1.4612	1.4775	35.17	64.83	8.0	56.8	Present	42902	Adulterated with cotton seed oil.
.....	1.1547	1.4628	1.4738	44.32	55.68	6.0	49.6	"	42903	Adulterated with cotton seed oil and low in camphor.
.....	1.2054	1.4604	1.4750	32.61	67.39	9.6	57.7	"	42904	Adulterated with cotton seed oil.
.....	1.2103	1.4603	1.4745	36.30	63.70	4.8	58.8	"	42905	Adulterated with cotton seed oil and low in camphor.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher as given by the Vendor.
				Quantity.	Cents.	

DISTRICT OF KINGSTON—

1910.						
Mar.	1	Linimentum Chloroformi.	44246 F. Hoag, Kingston.	12 oz.	1.20	Vendor
"	1	"	44247 C. S. Prouse, Kingston.	12 "	1.20	"
"	1	"	44248 J. McLeod, Kingston.	12 "	1.20	"
"	1	"	44249 A. P. Chown, Kingston.	12 "	1.20	"
"	4	"	44250 E. L. Payne, Peterboro.	12 "	1.00	"

DISTRICT OF TORONTO—

Mar.	2	Linimentum Chloroformi.	41487 A. E. Walton, Queen St., Toronto.	3 bots.	75	Vendor
"	9	"	41488 W. A. Howell, King St., Hamilton.	12 oz.	75	"
"	16	"	41489 A. W. Garner & Co., St. Catherine.	12 "	70	"
"	16	"	41490 W. W. Kerr, Main St., Niagara Falls, S.	12 "	1.20	"
"	18	"	41491 G. Tamblin, Young St. Toronto.	12 "	1.00	"

DISTRICT OF LONDON—

Mar.	10	Linimentum Chloroformi.	44718 Alexander Steward, Guelph.	3 bots.	75	Vendor
"	12	"	44726 H. M. Myers, Stratford.	12 oz.	85	"

DISTRICT OF WINDSOR—

Mar.	3	Linimentum Chloroformi.	42510 Anderson & Nelles, London.	12 oz.	1.00	Vendors
"	7	"	42522 Clement Drug Co., Sarnia.	12 "	1.05	"
"	7	"	42528 G. G. Ingersoll, Sarnia.	12 "	1.00	Vendor
"	8	"	42532 W. H. Dale, Peterboro.	12 "	1.00	"
"	9	"	42537 F. P. Reynolds, St. Thomas.	12 "	1.00	"

LINIMENTUM CHLOROFORMI.

Inspector's Report. (Is not an expression of opinion).	RESULTS OF ANALYSIS.								No. of Sample.	Remarks and Opinion of the Chief Analyst.
	Sp. gr. of Sample.	Refraction of		Residual Oil.	Volatile Matter.	Camphor.	Chloroform.	Cotton Seed Oil test.		
		Sample.	Residue.							

JAS. HOGAN, INSPECTOR.

				p. c.	p. c.	p. c.	p. c.			
.....	1.2073	1.4590	1.4747	34.84	65.16	8.0	57.1	Present	44246	Adulterated with cotton seed oil.
.....	1.2133	1.4617	1.4753	32.65	67.35	7.2	60.1	"	44247	Adulterated and low in camphor.
.....	1.1463	1.4612	1.4696	38.40	61.60	14.2	47.4	.....	44248	Genuine, and rather high in camphor.
.....	1.1535	1.4618	1.4751	35.11	64.89	13.6	51.2	Present	44249	Adulterated with cotton seed oil and rather high in camphor.
.....	1.1535	1.4597	1.4700	35.75	64.25	11.2	53.0	.....	44250	Genuine.

H. J. DAGER, INSPECTOR.

				p. c.	p. c.	p. c.	p. c.			
.....	1.2128	1.4597	1.4750	31.84	68.16	8.0	60.1	Present	41487	Adulterated with cotton seed oil.
.....	1.1965	1.4608	1.4738	40.19	59.81	1.6	58.2	"	41488	Adulterated with cotton seed oil and too low in camphor.
.....	1.2142	1.4606	1.4747	29.66	70.34	11.2	59.1	"	41489	Adulterated with cotton seed oil.
.....	1.1858	1.4618	1.4750	37.28	62.72	7.2	55.5	"	41490	Adulterated with cotton seed oil and low in camphor.
.....	1.2004	1.4611	1.4743	37.93	62.07	4.0	58.0	"	41491	"

T. KIDD, INSPECTOR.

				p. c.	p. c.	p. c.	p. c.			
.....	1.2120	1.4608	1.4757	31.13	68.88	9.6	59.2	Present	44718	Adulterated with cotton seed oil.
.....	1.2326	1.4581	1.4708	28.06	71.94	8.8	63.1		44726	A slight excess of chloroform and too little oil.

JNO. TALBOT, INSPECTOR.

				p. c.	p. c.	p. c.	p. c.			
.....	1.1921	1.4610	1.4752	30.82	69.18	12.0	57.1	Present	42510	Adulterated with cotton seed oil.
.....	1.2130	1.4593	1.4709	30.36	69.64	10.0	59.6	.....	42522	Genuine.
.....	1.2125	1.4589	1.4708	30.82	69.18	9.2	59.9	.....	42528	"
.....	1.2063	1.4598	1.4740	33.51	66.49	7.6	58.8	Present	42532	Adulterated with cotton seed oil.
.....	1.2121	1.4596	1.4758	30.68	69.32	0.0	59.3	"	42537	"

LINIMENTUM CHLOROFORMI.

Inspector's Report. (Is not an expression of opinion).	RESULTS OF ANALYSIS.							No. of Sample.	Remarks and Opinion of the Chief Analyst.	
	Sp. gr. of Sample.	Refraction of		Residual Oil.	Volatile Matter.	Camphor.	Chloroform.			Cotton Seed Oil test.
		Sample.	Residue.							

A. C. LARIVIERE, INSPECTOR.

				p. c.	p. c.	p. c.	p. c.			
.....	1.0649	1.4513	1.4698	44.21	55.79	8.6	47.1	.....	43401	Genuine.
.....	1.2328	1.4579	1.4698	32.15	67.85	3.4	65.4	.....	43402	Too low in camphor.
.....	1.1730	1.4619	1.4750	32.59	67.41	15.2	52.2	Present	43403	Adulterated with cot- ton seed oil and ex- cess camphor.
.....	1.1425	1.4618	1.4700	40.35	59.65	12.4	47.2	.....	43404	Genuine.
.....	1.1541	1.4633	1.4752	36.56	63.44	15.2	48.2	Present	43405	Adulterated with cot- ton seed oil and ex- cess of camphor.

R. W. FLETCHER, INSPECTOR.

.....	1.1903	1.4607	1.4721	33.77	66.23	10.4	55.8	Present.	35672	Adulterated with cot- ton seed oil.
.....	1.2071	1.4612	1.4750	31.82	68.18	9.6	58.5	"	35673	"
.....	1.2011	1.4612	1.4734	33.15	66.85	9.2	57.6	"	35674	"
.....	1.1839	1.4603	1.4695	33.29	66.71	8.8	57.9	.....	35675	Genuine.
.....	1.1524	1.4630	1.4737	42.84	57.16	10.0	47.1	Present.	35676	Adulterated with cot- ton seed oil.

JNO. F. POWER, INSPECTOR.

.....	1.2091	1.4609	1.4752	33.43	66.57	7.6	58.9	"	37528	Adulterated with cot- ton seed oil.
.....	1.1726	1.4607	1.4703	34.83	65.17	13.2	51.9	.....	37839	Genuine. Somewhat high in camphor con- tent.
.....	1.1269	1.4639	1.4733	48.48	51.52	6.4	45.1	Present.	37840	Adulterated with cot- ton seed oil and low in camphor.
.....	1.2160	1.4605	1.4747	34.79	65.21	4.8	60.4	"	37841	"
.....	1.1518	1.4613	1.4696	39.04	60.96	11.2	49.7	.....	37842	Genuine.

D. OSULLIVAN, INSPECTOR.

.....	1.2158	1.4587	1.4700	34.18	65.82	4.8	61.0	.....	41664	Low in camphor.
.....	1.1406	1.4634	1.4748	35.48	64.52	6.0	58.5	Present.	41665	Low in camphor and contains cotton seed oil.
.....	1.1897	1.4610	1.4740	39.19	60.81	2.4	48.4	"	41666	"
.....	1.1666	1.4623	1.4750	39.69	60.31	8.8	51.6	"	41667	Adulterated with cot- ton seed oil.
.....	1.1264	1.4646	1.4743	42.61	57.39	13.6	43.7	"	41668	Adulterated and some- what high in camphor